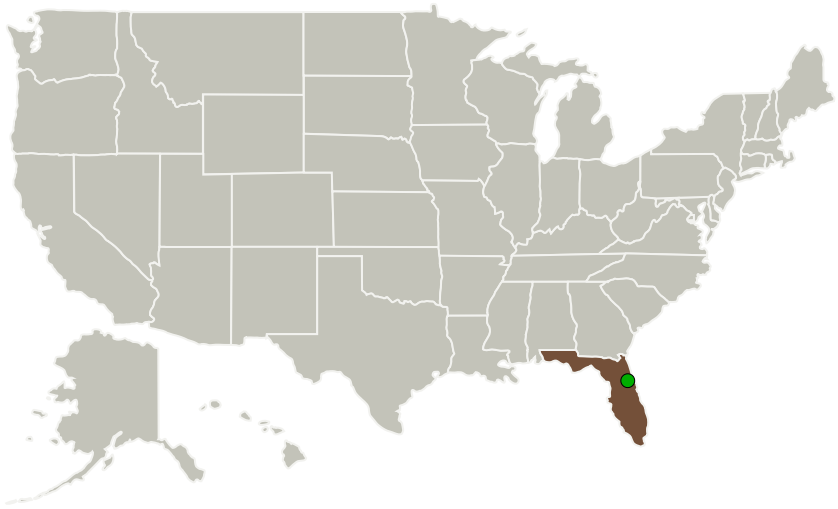
Radiation Tolerant 802.16 Wireless Network, Phase II

Completed Technology Project (2010 - 2011)

Project Introduction

Exploration of planetary surfaces will require a communication architecture that supports operational capabilities in which fixed and mobile assets on the planetary surface can communicate seamlessly and securely to coordinate planetary exploration as well as communicate back to Earth. Communication systems operating on planetary surfaces will also require innovative solutions for analyzing and characterizing the lunar propagation environment. Communications capabilities will need to include bi-directional, multi-point links to provide on-demand, autonomous interconnection between base stations, mobile robotic rovers, mobile humans, and in-space relay stations. Communications could consist of voice, video, data and control. Current available system solutions do not fulfill this need with respect to range, mobility, bandwidth, size, weight, and power. Aeronix understands these issues and believes that the solution lies in the development of wireless devices that employ the radiation tolerant semiconductors and software radios as an underlying architecture feature.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Aeronix, Inc.	Lead Organization	Industry	Melbourne, Florida
Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida

Primary U.S. Work Locations
Florida

Project Transitions

January 2010: Project Start

August 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139369)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Aeronix, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

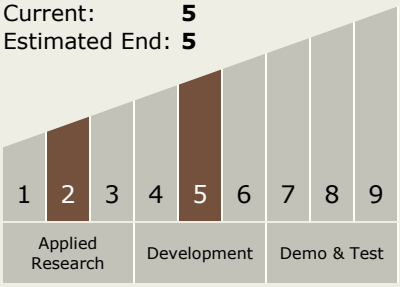
Carlos Torrez

Principal Investigator:

Steven Iezzi

Technology Maturity (TRL)

Start: **2**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX10 Autonomous Systems
  - TX10.1 Situational and Self Awareness
    - TX10.1.4 Hazard Assessment

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System